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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,085	04/11/2005	Hiroto Tamaki	925-319	2113
23117 7590 07/27/2009 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
KOSLOW, CAROL M				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
07/27/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/531,085

Applicant(s)

TAMAKI ET AL.

Examiner

C. Melissa Koslow

Art Unit

1793

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26-31 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 14-25 and 32 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

This action is in response to applicants' amendment of 28 April 2009. Applicant's arguments have been fully considered but they are not persuasive.

Claims 26-31 are allowable over the cited art of record.

Claims 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims are allowable over the cited art of record for the reasons given in the previous actions.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This claim is indefinite since it depends upon itself. It appears claims 7 should depend from claim 1.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5, 7-9, 14, 16, 18, 20, 24, 25 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent 6,717,353.

This reference teaches an oxynitride phosphor having the formula $(\text{Sr}_{1-a-b-c}\text{Ca}_b\text{Ba}_c)\text{Si}_x\text{N}_y\text{O}_z:\text{Eu}_a$, where a is 0.002-0.2, b is 0-0.25, c is 0-0.25, x is 1.5-2.5, y is 1.5-2.5 and z is 1.5-2.5. This is the same formula as claim 1 and thus the phosphor must have a rhombic lattice system, a weight ratio of nitrogen to oxygen that falls within that claimed and the luminescent properties of claims 16 and 18, absent any showing to the contrary. Figure 1 shows that the

phosphor is excited by light having a wavelength of 490 or less and has a luminescent spectra having a peak wavelength at a longer wavelength side than the excitation peak, the claimed "said luminescence peak wavelength. The amount of europium falls within that of claim 25 and thus it must have the property of claim 24. While the taught phosphor is produced by different process than that claimed, the resulting phosphors appear to be identical. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The reference that the oxynitride phosphor emits green light. The reference teaches the claimed phosphor.

Claims 4, 15, 17, 19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,717,353.

As stated above, this reference teaches an oxynitride phosphor having the formula $(\text{Sr}_{1-a-b-c}\text{Ca}_b\text{Ba}_c)\text{Si}_x\text{N}_y\text{O}_z\text{:Eu}_a$, where a is 0.002-0.2, b is 0-0.25, c is 0-0.25, x is 1.5-2.5, y is 1.5-2.5 and z is 1.5-2.5. The amount of europium overlaps that claimed. The taught ranges of x, y and z encompass and overlaps those claimed. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The taught ratios of Sr to Ca, Sr to Ca and Ca to Ba overlap those claimed. When c is greater than 0, the reference suggests a Ba containing oxynitride and the resulting phosphor would be expected to have the luminescent

properties of claims 15, 17 and 19, absent any showing to the contrary. In addition, when c is greater than 0, the reference suggests the claimed device which would have a spectra that has peaks in the claimed ranges and a R_a that falls within the claimed range. The reference suggests the claimed phosphor.

The amendment of inserting the limitations of claim 6 into claim 1 does not overcome the rejections since claim 6 was rejected in the previous action. This amendment does not limit the claimed subject matter to the composition discussed in the declarations since it includes compositions where $x \neq 1$, $y \neq 2$, $z \neq 2$ and L is not limited to Ba, Sr, Ca and mixtures of Ca and Sr. Thus the claimed genus includes species not disclosed in the declaration. As stated in the previous actions, there is no showing that the difference between the claimed genus and the disclosed species would have obvious to one of ordinary skill in the art in view of the 37 CFR 1.131 evidence and disclosed species in the declaration do not show that applicants had possession of the basic inventive concept, as defined by claims 1-5, 7-9, 14-25 and 32, before 14 October 2002. See MPEP 715.02. Furthermore, the reference teaches several species that fall within the claimed genus and are different from those in the declaration. Applicants have not shown that these species would have been obvious to one of ordinary skill in the art in view of the 37 CFR 1.131 evidence. See MPEP 715.03(I)(B) and (II). It is noted that the phosphor art is an unpredictable one and thus the showing the phosphors having the basic formula $MSi_2O_2N_2:Eu$ where M is Ba, Ca, Sr or Ca and Sr and where Eu is 15 mol% or less does not support the claimed geneses since one of ordinary skill in the art would not be able to predict what a change in M and/or the activator, or a change in the amounts of any of the elements in the formula would do to the luminescent properties of the material. The rejection is maintained.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/cmk/
July 27, 2009

/C. Melissa Koslow/
Primary Examiner
Art Unit 1793